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ABSTRACT

Customer focus groups at Lakeshore Technical College, Wisconsin, were hindered by inadequate levels of participation. A study explored the effectiveness of using network meeting management software to increase focus group participation and the number of ideas generated as well as reduce the amount of time spent on conducting the focus group sessions. Participants were 2 groups of 24 randomly selected students enrolled in associate degree programs offered in a rapid delivery schedule. One group participated in a traditional focus group, the other in a focus group using meeting software. A formal focus group session was held for the first group. The second was given the location and time availability of the meeting management software and requested to participate at a time convenient to them. Two students attended the first focus group session; four attended the second. They generated 93 ideas. The first session lasted 40 minutes, the second 50 minutes. Only two students participated in the focus group sessions using the network meeting software. They generated 26 ideas and spent an average time of 10 minutes. Based on the chi-square statistic, results showed no significant difference between the two types of focus groups. Conclusions were that both methods produced similar results and other variables such as accessibility and scheduling might influence participation. (Appendixes contain 16 references, focus group questions, instruments, and software use instructions.) (YLB)

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ED 411 441

DETERMINATION OF EFFECTIVENESS OF NETWORK BASED MEETING MANAGEMENT SOFTWARE ON PARTICIPATION IN THE CUSTOMER FOCUS GROUP PROCESS AT LAKESHORE TECHNICAL COLLEGE

Research Methodology

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Abstract of a practicum report presented to Nova Southeastern University in partial fulfillment of the requirements for the degree of Doctor of Education

DETERMINATION OF EFFECTIVENESS OF NETWORK BASED MEETING MANAGEMENT SOFTWARE ON PARTICIPATION IN THE CUSTOMER FOCUS GROUP PROCESS AT LAKESHORE TECHNICAL COLLEGE

by

Michael A. Lanser

September, 1996

The problem was that there were inadequate levels of participation in customer focus groups at LTC. The purpose of the project was to determine the effectiveness of using network meeting management software in increasing focus group participation, the number of ideas generated, and reducing the amount of time spent on conducting the focus group sessions. There were three null hypotheses including, there was no significant difference in the number of students participating, in the number of ideas generated, and in the time spent participating in the two groups.

Students enrolled in Associate degree programs offered in a rapid delivery schedule were chosen for participation. Two groups of 24 students were randomly selected. The first group participated in a traditional focus group and the second in a

focus group using meeting software. A .05 level of significance was used for the project.

Based on the chi-square statistic, the results showed no significant difference between the two different types of focus groups. Therefore, the research failed to reject null hypotheses. Two conclusions were reached including that both the traditional and electronic methods produced similar results, and that other variables such as accessibility and scheduling may influence participation.

Five recommendations were made including that the electronic meeting software continue to be used. Second, other factors be studied to determine their influence on participation. Third, the quality of the ideas generated by electronic focus groups be studied. Fourth, the software be purchased. And finally, the software's capabilities for remote access be used.

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CHAPTER 1

INTRODUCTION

Lakeshore Technical College (LTC), one of Wisconsin's 16 Technical Colleges and part of the Wisconsin Technical College System (WTCS), operates under a shared governance concept with the state and local boards equally responsible for setting and administering policies. The college offers associate degree and vocational diploma programs, and adult and continuing education courses. In 1991, LTC received a ten-year accreditation from the North Central Association of Colleges and Schools (NCA).

Institutional effectiveness is an important criteria of North Central and a priority in LTC's Strategic Plan. Lakeshore Technical College uses focus groups as a method of obtaining customer feedback to determine if its systems and processes are meeting customer needs.

Nature of the Problem

Lakeshore Technical College adopted a breakthrough objective in 1995-96 that was aimed at developing systems for gathering customer input. The existing methods for gathering input were time consuming and therefore limit the number of students that can participate. An increasing number of part-time students are attending LTC which contributes to the difficulty in bringing students together to participate in the focus group sessions.

The problem was that there were inadequate levels of participation in customer focus groups at LTC. Varying and busy schedules of students made it difficult to get students together

for focus group sessions. This led to a concern that students who did participate were not representative of the student body.

A letter from J. Malmberg (1995, June 2) to D. Ladwig, P. Lacey, and M. Lanser requested purchasing a research license from Group Systems for $2000 to use its software for the purposes of gathering customer input. To purchase the software under a commercial license would cost $20,000. The college had no way of determining whether the investment in the software would increase the effectiveness of meetings or focus group sessions.

Purpose of the Study

The purpose of the project was to determine the effectiveness of network meeting management in increasing focus group participation, increasing the number of ideas generated, and reducing the amount of time spent on conducting the focus group sessions. The purpose of gathering the input was to provide data to make decisions about how to improve the quality of decisions being made. Increasing participation would ensure input from a wider range of participants. Utilization of the network meeting management software would require less administrative time in scheduling meeting dates and times to accommodate the variety of student schedules.

Two methods existed for gathering input from customers -- focus groups and questionnaires. Participation in customer input sessions would be expanded and consume fewer resources. Using the software would give more students the opportunity to participate in focus group sessions thus enabling students to contribute to the educational process.

Significance to the Institution

Customer focus, continuous improvement, and employee involvement, were the three components of LTC's Total Quality Leadership philosophy. A tool that would increase participation in customer focus groups would improve decision making through expanded and more representative involvement. It would help LTC administration better understand customer needs. In addition, the software could be used to secure more rapid feedback on budget and operational issues from staff and students.

Relationship to Seminar

This practicum report was directly related to the Research Methodology seminar in that a statistical comparison was made to determine if meeting management software improved the effectiveness of the participation in Lakeshore Technical College's customer focus groups. The completion of this practicum required study in statistical analyses.

Research Questions

There were three research questions for the project. First, does the use of network meeting software increase participation in Lakeshore Technical College's customer focus groups? Second, does the use of network meeting software in focus groups generate more ideas than traditional focus groups? And third, does the use of network meeting software reduce the amount of time spent conducting focus group sessions?

Research Hypotheses

There were three research hypotheses for the project. First, the use of network meeting software increases

participation in customer focus groups. Second, students using network meeting software in customer focus groups generate more ideas than students participating in traditional focus groups. And third, less time is spent conducting focus group sessions using network meeting software.

Definition of Terms

For the purposes of this project, the following terms need clarification:

Breakthrough. An identified area of product or service improvement based on the strategic plan. A breakthrough objective is directly linked to the strategies and cannot be accomplished without a major institutional effort.

Effectiveness. The extent to which the network based meeting management software improved participation and the number of ideas generated.

Idea. An individual thought that was either written down by the facilitator or entered into the computer by a participant.

Focus Group. A discussion with a group of people to obtain a better understanding of issues, problems, or concerns.

Groupware. "A set of technologies that is intended to improve the productivity of two or more workers cooperating to achieve common goals" (Gibbs, pp. 73).

Network Meeting Software. Computer software that runs on a computer network that is used to facilitate meetings or obtain individual input.

Chapter 2

REVIEW OF THE LITERATURE

Introduction

Education institutions have a certain amount of bureaucracy that prevent them from being able to respond quickly. Customers of educational services are demanding different types of service and delivery with shorter turnaround time. Naisbitt (1994, pp. 12-13) says that as things move more into a global context the smaller and speedier companies will dominate because of their ability to respond quickly. Information technology is changing rapidly, resulting in expanded competition for traditional education institutions. Consumers of education now have the ability to draw resources globally. Information technology can provide education institutions the ability to identify customer needs quickly and respond appropriately. Literature in the areas of computer networks, groupware, and focus groups will be reviewed.

Computer Networks

In the mid 1980s Personal Computer (PC) technology began to appear. Personal computers allowed all employees to work directly with technology and let users break free of the centralized control of data processing departments. Stand-alone PCs, however, had limitations. There was no information exchange and they did not allow people to work together. (Tapscott & Caston, 1993) Local Area Networks (LANs) allowed better communication among workers, provided more structured work between groups of people over distances, and gave organizations

ways of computerizing their operations that would have been expensive with mainframe computers. Personal Computers could boost personal productivity but needed to be networked to be effective (Gibbs, 1995).

The development of local area networks (LANs) enabled people to work together as groups within their departments. People began to share information through electronic mail and by co-authoring documents (Tapscott et al., 1993). Work group computing streamlines communications, eliminates unproductive activities in the business process, and improves collaborative creation of work products. Tapscott and Caston (1993) report the following four factors support the growth in work group computing.

1. Growth of desktop capability means more enterprise information technology functions revolve around individual work stations.
2. Networking allows work stations to link to fileservers, large databases, and other work stations throughout the organization.
3. Maturing of user interfaces and the integration of data, text, voice, and image. Its made technology more useful and usable by lay people.
4. Functionality combined with ability to communicate new capabilities are emerging. (p. 42)

Groupware

"Groupware is a set of technologies that is intended to improve the productivity of two or more workers cooperating to achieve common goals" (Gibbs, 1995, pp. 73). The concept of groupware is vaguely defined but generally involves applications that help a group of users exchange task-related information and manage work flow and usually provides electronic mail, calendaring, shared databases, and work flow support services

(Gibb, pp. 296-298). Groupware "enables us to go beyond traditional time and motion studies to reengineer business processes and refocus organizations around the business team" (Tapscott, 1993, p. 41).

> The old work model -- everyone sitting at a PC, duplicating everyone else's work and shooting messages from point A to point B -- is holding us back. Applications suited to work patterns of the group can eliminate wasted effort by taking advantage of work already completed. At the same time, we can have instant access to just the information we need to make better decisions, plot better strategies, and call fewer meetings. (Kaplan, Lauriston, & Fox, 1992, p. 209)

Electronic meeting support software is a groupware application that facilitates interaction and collaboration using technology. Kranz and Sessa (1994) report that in addition to saving time and improving participation the software produces additional benefits over traditional meetings.

> They are better-planned and stay on task because an agenda is a integral part of the electronic process; they create a wider range of alternatives for consideration; they provide the ability for the group to measure and move toward consensus and commitment at all times; they produce a stronger commitment to solutions; and they create meetings that are fully documented with computer-generated printouts available during and after the meetings. Uses for electronic meeting software are as varied and creative as the organizations that employ them: Strategic planning, total quality management facilitation, and community planning are but are a few. (Kranz & Sessa, 1994, p. 207)

Perreault and Moses (1992) conducted a study that compared students using groupware to complete a writing assignment with students using face-to-face meetings. No significant differences were found between the groups (Perreault et al., 1992, p. 163). They did conclude, however, that student perceptions for ease, speed, and convenience were more positive for face-to-face meetings (Perreault et al., 1992, p. 162).

Groupware is being used in a variety of ways at colleges and universities (Watkins, 1992, p. A22). Georgetown University used computer conferences to select job candidates for interviews. San Diego State University uses electronic meetings to conduct simulated negotiation sessions in management classes. Gallaudet University uses electronic meeting technology for students to find topics for compositions. Additionally, "studies conducted by the University of Arizona and International Business Machines (IBM) have shown that electronic meetings take 55% less time than traditional meetings" (Watkins, 1992, p. A22).

Group Systems V, version 1.1 software will be the meeting management software used in the project. The software was developed by Ventana Corporation headquartered in Tucson, Arizona. The software contains a suite of meeting support tools and a survey tool. The survey tool was used for this project. Group Systems Survey runs on a local area network and can be accessed by anyone using the network. Additionally, a separate program exists for those not on the network to use on their PCs. The software can be used to facilitate customer focus group sessions. Participants can respond at length to open ended questions with anonymity.

According to PC Magazine "Group Systems V, has the richest set of tools for running same-time, same-place, electronically enhanced meetings, as well as equally strong support for meetings held across a network and those held at different places and different times" (Kranz & Sessa, 1994, p. 206). Because of the flexible options provided by Groups Systems and groupware in

general, groupware can help facilitate the process of gaining information from customers.

Focus Groups

Information from customers is very important when making decisions on whether or not processes are meeting their needs.

> Customers are a good source of information in comparing the relative importance of various processes, however. Companies can determine what issues their customers care strongly about -- such as product cost, on-time delivery, product features, and so on. These issues then can be correlated with the processes that need reconstruction. (Hammer, 1993, pp. 127-128)

Focus groups are a good method of capturing customer information. "A focus group is typically composed of 7 to 10 participants who are selected because they have certain characteristics in common that relate to the topic of the focus group" (Krueger, 1994, p.6). Dawson, Manderson, and Tallo (1993) state that "a focus group is a group discussion that gathers together people from similar backgrounds or experiences to discuss a specific topic of interest to the researcher" (p. 7). Focus groups have an advantage over other data collection methods such as mail or telephone surveys in their ability to get at peoples attitudes and perceptions (Krueger, 1994, pp. 10-11). Additionally, ideas may be stimulated from the groups interaction (Krueger, 1994, pp. 10-11).

When using focus groups to gather data more is not necessarily better. The number of focus group sessions depends on how much new information is gained from the groups. Typically, if no new information is provided, a researcher need not conduct any more focus groups. This can happen sometimes

after two or three sessions (Dawsen et. al., 1993, p. 24). Krueger (1994) reports that a focus group study can consist of anywhere between three and several dozen groups (p. 6). According to Dawson, Manderson, and Tallo (1993), the number of participants in a focus group is usually between four and twelve (p. 25). Similarly, Krueger says that "a focus group is typically composed of 7 to 10 participants" (p. 6).

Charleston Southern University used focus groups to gather more information about student perceptions of student services. Current surveys did not give enough substantive information about student needs (Kaase & Harshbarger, 1993, p. 285). Lysack and Krefting (1994), found that combining focus groups with questionnaires and key informant interviews at different stages of fieldwork "increased the rigor of the entire research project" (pp. 106-107). Byers and Wilcox (1988) identified the following advantages and disadvantages of focus groups:

> One advantage is the release of inhibition by the participants. A second advantage of focus group data is that it usually contains a wide range of responses. A third advantage of the focus group method . . . is that of being a valuable source of exploratory information when little is known beforehand about the researcher's topic of interest. One disadvantage of the focus group is that . . . controversies may emerge; and the more outspoken members of the group may try to lead the group while those less articulate and less outspoken follow. Participants in the focus group may provide answers which they believe are socially acceptable so as not to appear abnormal or deviant from the other group members. Focus groups may also be very costly. A final disadvantage of the focus group method is that of biased results. (pp. 10-12)

Focus groups can be an effective tool in gathering customer information, however, precautions need to be taken to assure outspoken participants do not dominate the session. Technology

is available through groupware products such as Group Systems V software to protect the anonymity of participants and still provide the exchange of ideas through the software, although not face-to-face.

Summary

Information technology can provide education institutions the ability to identify customer needs quickly and respond appropriately. The development of local area networks (LANs) enabled people to work together and share information (Tapscott et al., 1993). Groupware is one technology that allows people to work together to achieve their goals (Gibbs, 1995, pp. 73).

Colleges and Universities are finding numerous ways to use groupware products. Group ware is being used to select candidates for jobs, conduct simulated negotiations sessions, and to select topics for compositions (Watkins, 1992, p. A22). Studies hava also shown that meetings conducted using groupware take 55% less time than traditional meetings (Watkins, 1992, p. A22). Group systems V, version 1.1 software is the groupware product selected to be used for the project. Among the many features of the software, the survey component allows participants to respond at length to open ended questions with anonymity. Group Systems V was reported to have the "richest set of tools" in a review of several groupware products (Kranz & Sessa, 1994, p. 206).

Information from customers is very important when making decisions on whether or not processes are meeting their needs and focus groups are a good method of capturing that information.

A focus group usually has 7 to 10 participants (Krueger, 1994, p. 6). In a focus group people with similar experiences are brought together to discuss a topic that important to the researcher (Dawson, et al., 1993, p. 7). Focus groups were used by one University to gain information on student perceptions of student services because survey instruments did not provide enough information (Kaase & Harshbarger, 1993, p. 285). Additionally, it was found that when combining focus groups with questionaires the rigor of a research project can be improved (Lysack & Krefting, 1994, pp. 106-107).

Chapter 3

METHODOLOGY AND PROCEDURES

Data Collection

The research problem solving methodology was used for this project.

Population

Lakeshore Technical College has identified four major customer markets (Appendix A). Students falling into "employed adults seeking professional development/changing careers" market segment was chosen for the project. Employed adults seeking professional development/changing careers are defined as those persons 21 years and older who are currently working in a job that are not what they like and/or requires additional skills or education to maintain employment. The attributes that describe students in this market segment are (a) 21 years of age or older, (b) employed either part-time or full-time, (c) are enrolled in 6 or fewer credits, and (d) are enrolled in associate degree or technical diploma courses.

For this project, a specific group within this market was selected. This group includes students enrolled in Associate Degree programs offered in a rapid delivery schedule. Six programs are offered in the rapid delivery schedule at LTC. These include (a) Accounting, (b) Marketing, (c) marketing Business to Business. (d) Materials Management, (e) quality Technician Certificate, and (f) Supervisory Management. To enroll in one of these programs, students must be employed. The student is able to complete the program in approximately 2.5

years. In the rapid delivery format, the courses are sequenced over the entire time period without regard for usual school year scheduling. Instruction in the programs takes advantage of students' prior learning and knowledge as well as collaborative learning approaches. The population for the project consisted of the 123 students enrolled in the rapid delivery programs as of January 15, 1996. This was the population selected for the project.

Sample

Two groups of students were randomly selected from the rapid delivery student population to participate in the customer focus groups. The significant characteristics of the students in each of the two groups included (a) they were 21 years of age or older, (b) they were employed either part-time or full-time, (c) they were enrolled in six or fewer credits, and (d) they were enrolled in a rapid delivery program. The first group used the focus group process normally used by LTC. The second group used the electronic meeting management software to participate in the focus group.

The samples were selected according to the following procedure. First, a list of students enrolled in rapid delivery programs was generated by the Data Processing department at LTC. The list of students was in social security number order. Second, the LTC Research Department staff divided the list in half. This was done by going down the list and placing every other student in a different group. The sample designated to use electronic meeting management software was selected from one-half

of the list. The sample designated to use traditional focus group process was selected from the second half of the list. Third, using a table of random numbers, a sample of 24 was drawn from the group designated to participate in the electronic meeting management software. Because two sessions were designated to participate in the traditional focus group process members in this group were randomly assigned to one of the two sessions scheduled. A sample of 12 was drawn for the first focus group and a second random sample of 12 was drawn for the second focus group.

Group Treatment

Each group was instructed in the procedures to be used in the focus group. Group one was requested to attend one of the two focus group sessions scheduled at predetermined times and places. The focus questions (see Appendix B) were developed by the Administrator of Research based on criteria (see Appendix C) identified from the LTC Quality Service vision statement. The questions were grouped into five categories including (a) opening question, (b) introductory questions, (c) transition questions, (d) key questions, and (e) ending question (Krueger, 1994). The questions were reviewed by the Student Services Manager and the Administrator of Administrative Services.

A formal focus group session was held for the first group. Group two was given the location and time availability of the meeting management software and requested to participate at a time that was convenient to them. This group's participants

interacted with the software program a the convenience of their individual schedules.

Data Presentation

The following data were collected; (a) the number of students participating in each focus group; (b) the number of ideas generated by each participant, and (c) the amount of time spent by each student participating in the focus group. Data were gathered on a data collection form (Appendix D). For the traditional focus group the data was collected during the focus group session using the form in Appendix B including the start time. Each students name was written down on the form and each time they offered an idea a tally mark was made next to their name under the appropriate question column. The facilitator of the session recorded each idea on a flip chart. Additionally, both traditional sessions were videotaped. After the focus groups was completed the ending time was written on the form and the total number of ideas for each student was calculated and summed for the group.

Data collection for the students using the electronic meeting software was completed after all students had participated in the electronic focus group. The same questions used in the traditional focus groups were entered into the computer. The amount of time the students spent on the computer was recorded by the software. A printout of the responses to the questions was obtained and the ideas were tallied for each question. The number of participants, number of ideas, and time spent was then recorded on a form.

Data Analysis

Null Hypothesis

There were three null hypotheses for the project. First, there was no significant difference in the number of students participating in the two groups. Second, there was no significant difference in the number of ideas generated in focus groups using meeting management software. And third, there was no significant difference in the time spent participating in the two groups.

Alternative Hypothesis

There were three alternative hypotheses for the project. First, focus groups conducted using meeting management software will have significantly higher participation. Second, students using network meeting software in customer focus groups will generate significantly more ideas. And third, students using network meeting software in customer focus groups will spend significantly less time participating.

Level of Significance

A .05 level of significance was used for the project. Using two degrees of freedom, the table value was $X^2=5.991$ (Freund, 1984, p. 501). If the calculated value is equal to or less than 5.991, the null hypotheses is accepted (Ary & Jacobs, 1976, p. 403). If the value is greater than 5.991, the null hypotheses is rejected and the alternative hypothesis accepted.

Statistical Test

The chi-square statistic (Freund, 1984, p. 341) was used to analyze the data. "Chi-square is a nonparametric statistical

procedure that is used as an inferential statistic with nominal data, such as frequency counts, and ordinal data, such as percentages and proportions" (McMillan & Schumacher, 1993, p. 612). "Nonparametric tests are used to test hypotheses involving ordinal data" (Ary & Jacobs, 1976, p. 395).

When more than one independent variable exists, the test is referred to as the independent samples chi-square test or contingency table (McMillan & Schumacher, 1993, p. 361). Three independent variables were measured in this project including participation, number of ideas, and time. The dependent variable was the type of focus group session; traditional or electronic.

Assumptions

For this project, it was assumed that the students have the skills necessary to use the software. It was also assumed that students using the meeting software had access to the computer network. It was further assumed that the software was operational on the LTC computer network.

Limitations

The project was limited in that Group Systems V software was used as the electronic meeting management software program. Another limitation was that the project was limited to the market segment of employed adults seeking professional development for changing careers. A further limitation was that the quality of the ideas was not judged. The project was also limited by the small number of participants.

Chapter 4

RESULTS

An analysis of the effectiveness of network-based meeting management software was conducted. It was expected that the use of the meeting management software by students would increase participation in the LTC customer focus group process. In addition, it was anticipated that more ideas would be generated and that less time would be spent conducting the focus groups. The results of this project will provide a basis for making the decision to purchase or not purchase the software for use at LTC. Also, the software could help LTC get feedback from students on various issues. It is also expected that this software can be used to get input and feedback from staff on strategic planning, budget, and operational issues.

The population selected for the project was selected from the employed adults seeking professional development/changing careers market segment. Specifically the population consisted of 123 students and was drawn from students enrolled in Associate Degree programs offered in the rapid delivery schedule at LTC as of January 15, 1996.

Two random samples of 24 were drawn from the population. Students in one sample were selected to participate in one of two traditional focus group sessions. Students in the second sample participated in a focus group session using Group Systems V, version 1.1, network meeting software by Ventana Corporation.

The traditional focus group sessions were scheduled first. The first session was held on Wednesday, March 6, 1996 and the

second was held on Thursday, March 14, 1996. Both sessions were scheduled to start at 5:00 p.m. Students were sent a letter on February 26, 1996 (see Appendix E) from the Student Services Manager inviting them to participate. One student who could not participate because of a conflict wrote a letter to the Student Services Manager that contained the following message:

> Thank you for the invitation to discuss the registration process. The wording of the letter was very effective in producing action from the receiver. My work schedule interferes with the 5:00 p.m. meeting. Therefore, I will not be able to attend. However, my opinion of the present registration process is very positive. I can't think of any area that needs improvement. (Personal communication from a student to Student Services Manager, March 1996)

After only two students showed up at the March 6, 1996 session, a reminder memo was sent from the Student Services Manager to those students invited to the March 14, 1996 session. Four students attended that session. A total of 93 ideas were generated by students participating in the traditional focus group sessions or an average of 15.5 ideas per participant. The first session (March 6) lasted 40 minutes and the second (March 14) lasted 50 minutes for an average time of 45 minutes. Table 1 summarizes the data from the traditional focus groups.

Only two students participated in the focus groups sessions conducted using the network meeting software. The software was made available in a computer lab at Lakeshore Technical College for a two week period beginning Monday, April 22, 1996 and ending Friday, May 3, 1996 between the hours of 8:00 a.m. and 10:00 p.m. on Monday through Thursday and from 8:00 a.m. and 4:00 p.m. on Friday. A letter was sent (see Appendix F) on April 12, 1996 inviting the students to participate.

Table 1

Traditional Focus Groups Data Collection

Participants	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	T
1	2	1	2	4	2	3	0	4	2	1	21
2	1	1	1	2	4	1	0	4	3	1	18
3	1	1	1	1	3	1	1	2	0	2	13
4	1	0	1	1	1	1	0	1	0	0	6
5	1	1	1	1	4	1	0	6	3	1	19
6	2	1	1	1	2	3	0	3	2	1	16
Total	8	5	7	10	16	10	1	20	10	6	93

Note. Q1 through Q10 refers to the question number. T refers to the total number of ideas each participant offered.

Upon arrival at the computer lab, students were instructed to talk to the computer lab assistant who gave them written instructions (see Appendix G) on how to use the software.

No students showed up to participate during the first week. A reminder memo was sent on May 1, 1996 to all students who were invited. The time period was extended one week through Friday, May 10, 1996. During that time two students participated. A total of 26 ideas were generated and the average time spent by the two students was 10 minutes. Table 2 summarizes the data collected from the network meeting software focus group.

A total of 6 students participated in the two traditional focus group sessions and generated 93 ideas. The average time spent by the two groups was 45 minutes. Two students participated in the focus groups using the electronic meeting

software and generated 26 ideas. The average time spent was 10 minutes.

Table 2

Network Meeting Software Focus Groups Data Collection

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	T
Ideas	4	2	2	3	4	2	2	1	3	3	26

Note. Q1 through Q10 refers to the question number. T refers to the total number of ideas.

An independent samples chi-square was conducted on the data using two degrees of freedom. The level of significance for the chi-square statistic with two degrees of freedom was $X^2=5.991$ (Freund, 1984, p. 501). The chi-square statistic calculated value of $X^2=.3872$ was less than the value of $X^2=5.991$, therefore, the research failed to reject the null hypotheses. Table 3 summarizes the results of the project. The expected frequencies are presented in parentheses below the observed frequencies.

Table 3

Chi Square Data

	Participation	Ideas	Time	Total
Traditional	6	93	45	144
	(6.33)	(94.15)	(43.52)	
Electronic	2	26	10	38
	(1.67)	(24.85)	(1.48)	
Total	8	119	55	182

In this project an analysis of the effectiveness of network-based meeting management software was conducted. It was expected

that the use of the software in conducting focus group sessions would increase participation and the number of ideas generated, and decrease the amount of time spent conducting the sessions.

Six students participated in the two traditional focus group sessions and generated 93 ideas in an average session length of 45 minutes. Two students participated in the focus groups using the electronic meeting software and generated 26 ideas with the average time spent of 10 minutes. The chi-square statistic calculated value of X^2=.3872 was less than the table value of X^2=5.991, therefore, the research failed to reject the null hypotheses.

Chapter 5

DISCUSSION, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Discussion

Lakeshore Technical College adopted a breakthrough objective in 1995-96 that is aimed at developing systems for gathering customer input. The existing methods for gathering input include traditional focus group sessions and questionaires. These methods are time consuming and, therefore, limit the number of students that can participate. Additionally, it was becoming difficult to find trained facilitators to facilitate the focus group sessions.

An increasing number of students are attending LTC on a part-time basis which also contributes to the difficulty in bringing students together to participate in the focus group sessions. The problem was that there was inadequate levels of participation in customer focus groups at LTC. Varying and busy schedules of students made it difficult to get students together for focus group sessions. This resulted in a concern that students who did participate were not representative of the student body.

Information technology and particularly computer networks provide an opportunity to change the way focus groups are conducted. Barriers such as location and scheduling can be overcome through computer networks that enable people to work together (Tapscott & Caston, 1993). Groupware products enable users to exchange information and change the workflow of

processes (Gibb, pp. 296-298). Electronic meeting support software is a groupware product that facilitates interaction and collaboration. Kranz and Sessa (1994) report that meetings conducted using electronic meeting support software can save time and improve participation (p. 207). Additional studies by IBM show that 55% less time was consumed in electronic meetings (Watkins, 1992, p. A22).

In a study conducted by Perreault and Moses (1992), however, no significant difference was found between groups completing a writing assignment using groupware and those completing the assignment in face-to-face meetings (p. 163). They concluded that perceptions for ease, speed, and convenience were more positive for face-to-face meetings (Perreault et al., 1992, p. 162).

Use of groupware is expanding in college and university settings, however. Colleges and universities are finding uses in selecting job candidates for interviews, conducting simulated negotiation sessions in management classes, and in finding topics for writing compositions (Watkins, 1992, p. A22).

Group Systems V, version 1.1 software was selected for this study. The software received strong reviews (Kranz & Sessa, 1994, p. 206).

Conclusions

An analysis of the effectiveness of network based meeting management software was conducted. While the use of the meeting management software did not significantly increase participation, increase the number of ideas generated, or decrease the time

spent by participants, two conclusions were reached. First, both the traditional and electronic methods produced similar results. No significant difference was found between the two. Second, other variables, such as accessibility and scheduling may influence participation. The project varied the method used to conduct the focus group sessions, however, each group still was required to drive to the LTC campus during a specified period of time to participate.

Implications

Because there was no significant difference between traditional meetings and meetings conducted using electronic meeting software, other variables may be influencing participation and need to be considered when purchasing the software. Use of the software in conducting focus group sessions electronically can help Lakeshore Technical College gain valuable customer information.

Since the results of the project should no significant difference between traditional and electronic focus groups, the software would be a good investment for LTC to help control the overall cost of focus groups. Although the preparation for the two types of sessions was similar, the electronic version did not require a facilitator or the manual transcription of the results from the flipcharts. The college will be challenged to find ways to improve participation in future sessions, such as, changing the location where students access the software.

Furthermore, the software an option to the college even when conducting traditional focus groups. The software can be used

when conducting traditional focus groups to gather participant input and assist in analyzing the input.

Recommendations

Five recommendations were made for this project. First, it was recommended that the electronic meeting software continue to be used in the future as a way of capturing customer input. Second, it was recommended that other factors such as accessibility, and flexibility be studied to determine their influence on participation. Third, further research should be conducted to determine if there is a significant difference between the quality of the ideas generated in traditional groups and those generated by electronic focus groups. Fourth, it was recommended that LTC purchase the electronic meeting software. Even though no significant difference was found, the review of literature indicates that benefits can be obtained. Finally, it was recommended that future uses of that software take advantage of the software's capabilities for remote access to eliminate any barriers location may present.

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APPENDIXES

Appendix A

Lakeshore Technical College Customer Markets

The following four customer markets have been identified at Lakeshore Technical College.

1. High School Graduates are those who will soon or have graduated from high school; they include 15-20 year olds. Within this grouping are many possible target markets. For example, the Institutional Communications Committee has targeted the 18-20 year old as a target market with a focus on those who did not choose to come to LTC directly.

2. Employed adults seeking professional development/changing careers are those adults 21 years and older who are currently working in a job that is not what they like and/or requires additional education to maintain employment. As with the high school market, various combinations of attributes can be used to help more specifically identify the target market(s) so the program/course design will meet customer needs.

3. Unemployed adults entering or re-entering the work force are those adults 21 years and older who do not have adequate skills to obtain employment in today's market place. Most often those in this market have inadequate basic skills and fears involving entering the workforce and/or school but desire to work.

4. Employer requested educational opportunities for their employees are those working adults whose employers with to have educational opportunities made available to their employees or

require their employees to learn new skills in order to keep their jobs or move up in the organization.

Appendix B

Focus Group Questions

The following questions were used in the focus groups.

Opening Question

1. Why are you taking the time to help LTC improve its registration process?

Introductory Questions

2. How do you feel about participating in this activity?

3. What do you expect to happen after you have helped LTC by being part of this focus group?

4. What does accessible and flexible service mean to you?

Transition Questions

5. How has registration for the courses you wanted/needed been a positive experience?

6. How has registration for the courses you wanted/needed been a negative experience?

Key Questions

7. What should LTC stop doing that would make registering for LTC courses better?

8. What would LTC start doing that would make registering for LTC courses better?

9. What should LTC keep doing that would make registering for LTC courses better?

Ending

10. If you had the power to change one thing in LTC's registration process, what would it be?

Appendix C

Criteria and Operational Definitions

Criteria	Operational Definition
1. Accessible	Capable of being used or seen.
2. Flexible	The capability to adapt to new, different, or changing requirements.
3. Needs based	Something requisite, desirable, or useful to serve as the starting point for action.
4. Defined Processes	To make distinct, clear, or detailed in outline a series of actions or operations to an end.
5. Staffing Plan	To devise, project, or formulate the personnel needed to carry out the assigned tasks in a given work unit.
6. Value to Customer	The relative worth, utility, or importance of a service to those who use the service.

Appendix D

Data Collection Instrument

The following table was used to collect data for the project.

Focus Group Data Collection Form											
Type of Group: _____ Start Time: _____ End Time: _____											
Name	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	T
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											

Appendix E

Text of the Letter Sent to Traditional Focus Groups

Lakeshore Technical College is conducting focus groups on our registration process at the college. We would like you to participate in this group. The purpose of the focus group is to determine whether the registration process is meeting the needs of current students especially those in non-traditional programs such as ACCEL. The results will provide information to make future system changes focused on serving part-time working adults.

The discussion that you will be attending will focus on information, registration, payment of fees, preregistration activities and other related matters. Your opinions and advice are valued by Lakeshore Technical College to improve our processes and procedures.

The meeting will be held on 3/14/96 in the Nemschoff Conference Room at 5:00 p.m. If you have any questions please contact Dean Voskuil at 458-4183 Ext. 119. Your cooperation and attendance will be greatly appreciated.

Sincerely,

Dean J. Voskuil

Student Services Manager

Appendix F

Text of Letter Sent to Students Using Electronic Meeting Software

Lakeshore Technical College is Seeking input from our students on the registration process at the college. We have already conducted some focus groups in person on campus and have received valuable information to help improve our processes. We would like you to participate in a similar process by using a personal computer located in the computer lab to answer a series of questions about registration and the processes related to it.

The software will be set up in room C106 from April 22nd to May 3rd. You will be able to access the system from 8:00 a.m. to 10:00 p.m. Monday through Thursday and from 8:00 a.m. to 4:00 p.m. on Friday during those two weeks. The information will already be set up for you on a personal computer that you can use by contacting the lab assistant in room C106. It sould take approximately 20 to 30 minutes to complete.

We are focusing on students in the ACCEL program area. The results will provide information to make future system changes focused on serving part-time working adults.

We value your opinions and advice and hope that you can help us improve our processes and procedures. If you have any questions please contact Dean Voskuil at 458-4183 Ext. 119.

Sincerely

Dean Voskuil

Student Services Manager

Appendix G

Instructions to Students Using the Electronic Meeting Software

1. Log in as: ADM\SURVEY
2. Password is: LTC
3. Select the Windows option (D) from the administrative network menu.
4. Run Group Systems by double clicking on the icon.
5. Enter the Group Systems login name: STUDENT
6. Enter the Group Systems password: LTC
7. Click on the OK button.
8. Double click on the survey of students icon.
9. Read the test instructions and click on the OK button.
10. Double click on question one and enter your response in the space provided.
11. Spell check your answer if you wish.
12. Click on submit.
13. Click on the next question and repeat steps 10, 11, and 12.
14. When finished exit the Groups Systems program.

OPERATION

The control switch is located near the middle of the lower left side of the console base. When the switch is in the up position, the console is in the day mode, and the "normal" indicator at the bottom right of the display panel lights. In the night mode, the switch is in a down position, and the "nite" legend will appear. The toggle switch located at the top of the console is marked Day-Nite and should be used accordingly.

ON THE CONSOLE, turn the two switches -- top switch down, left side switch up.

Press a vacant LPS key, press *#56 366, press release.
HOLIDAYS ONLY - *#56 366, press release and *#56 291, press release.

To unforward the Manitowoc and Sheboygan LTC locations each morning:
Press a vacant LPS key, press *#56 377, press release. (Manitowoc)
Press a vacant LPS key, press *#56 100. press release. (Sheboygan)

Check trunks each morning. You should hear a dial tone.

##80001	458-4183	##80030	1-800-443-2129
##80002	458-7314	##80031	1-800-443-2129
##80003	458-0130	##80032	1-800-443-2129
##80004	458-0167	##80033	693-8216
##80005	458-0197 (ANA)	##80034	693-8217
##80006	458-0286	##80035	693-8218
##80007	458-0357	##80036	693-8219
##80008	458-0366 (ANA PhMl)	##80037	693-8215
##80009	T1 out-only	##80038	693-8214
##80010	T1 out-only	##80039	693-8213
##80011	T1 out-only	##80040	684-1903
##80012	T1 out-only	##80041	684-1924
##80013	T1 out-only	##80042	684-4408
##80014	T1 out-only	##80043	684-4409
##80015	T1 out-only	##80044	684-4400
##80016	T1 out-only	##80045	684-0141
##80017	T1 out-only	##80046	684-0142
##80018	T1 out-only	##80047	684-7879
##80019	T1 out-only	##80048	684-2936 (MDED)
##80020	T1 out-only	##80057	684-2937 (MDED)
##80021	T1 out-only	##80058	684-2938 (MDED)
##80022	T1 out-only	##80059	458-0174 (SDED)
##80023	1-800-443-2129	##80060	458-4931 (SDED)
##80024	1-800-443-2129	##80061	458-0846 (SDED)
##80025	1-800-443-2129	##80062	457-6211 (FAX - ext. 148)
##80026	1-800-443-2129	##80063	684-4140 (MDED)
##80027	1-800-443-2129	##80064	Page 50 (campus-wide)
##80028	1-800-443-2129	##80065	Page 51 (nursing dept)
##80029	1-800-443-2129	##80066	458-0893 (SDED)

TURNING THE CONSOLE OFF (To answer night chimes *30)
Put the TDD machine and money box in first set of cabinets, middle drawer.
Turn off the computer. Put the disk in first set of cabinets, middle drawer.
Put Manitowoc LTC in voicemail - *#55 377 778, press release.
Lock three cabinets.
Put the console into the "nite" mode, flip switches - top switch up and left side switch down.
Press a vacant LPS key, press *#55 366 291, press release.
HOLIDAYS ONLY - *#55 366 350, press release and *#55 291 350 press release.

CAMPUS-WIDE PHONEMAIL MESSAGES

To listen: dial 777
press TONE 292 #
press 292 #
Press 3 - if you are not given the option to listen (3) we didn't get any messages.

10/96 mnm

RUNNING TRAFFIC REPORTS -

Friday at about 3:00pm set up the Panasonic Laptop that is stored in the middle drawer of the second set of file cabinets.

The connecting cords are on the desk near the walkie-talkie base station. The grey telephone cord connects to the "tele line" port on the back of the unit. The round, black power cord fits into the round port on the back of the unit. It only fits a certain way - can be tricky!

Turn the power on - rocker switch on the back of the unit. Red light will appear on the top of the unit.

Open the cover - press latches on each side of the cover and lift.

Turn the laptop on - blue button under "ON LINE". The machine will buzz (dial tone). Press "A" - dials the telephone computer. (ringing phone and loud screech followed by a beep) ROLM CBX MODEL 10, ... will show on the screen.

Curser is blinking behind the word:

"USERNAME": type in BOM press "return".

"PASSWORD": type in COLR4831 press "return".

% type in LI space TRAF space ;; space LAST press "return". Data will scroll down the screen. When the next % sign shows on the screen turn the printer on - press the "BREAK" key (lower right hand side of the keyboard). A feature bar appears at the bottom of the screen. Press the F7 button (2nd last button above the keyboard). This turns the printer on. The next data is used for the reports :

% type in LI space TRAF space ;; space NOW press "return". All data will print at this time.

% type in LPEG space ALL press "return". (data shows 0 = 0)

% type in LPEG press "return". When the printer stops turn the printer off - press the F7 button.

% type in CL space TRAF space ; space NOW press "return" - CLEAR CLI TRAFFIC TABLES (Y/N)? - type in Y press "return".

% type in CL space TRAF space ; space LAST press "return" - CLEAR CLI TRAFFIC TABLES (Y/N)? - type in Y press "return".

% type in CPEG press "return".

% type in Bye press "return"

USERNAME: turn the unit off - blue button under "ON LINE". Close the cover. Turn power off - rocker switch on the back. Disconnect telephone line and power cord. Put the laptop in the drawer.

11/96
mnm